

### **REMARKS/ARGUMENTS**

Favorable reconsideration by the Examiner is respectfully requested in light of the foregoing amendments and the remarks which follow.

Claim 1 has been amended to incorporate the subject matter of Claim 5, which has been cancelled. Claim 1 is now directed to the honeycomb embodiment illustrated in Figure 1. Claims 6-8, directed to other embodiments of the invention have been cancelled.

The Official Action included two obviousness rejections, one based upon the combination of Kodiyalam et al. and Sedlak et al.; the other based upon the combination of Wirt in view of Sedlak et al. The Examiner recognizes that the Kodiyalam reference is not applicable to a honeycomb structure, since Claim 5 was not included in that ground of rejection.

As to the rejection based upon the combination of Wirt and Sedlak et al., Applicant requests reconsideration by the Examiner and withdrawal of this ground of rejection. The Wirt patent discloses a honeycomb structure in the form of a honeycomb core **14** with a backing sheet **12** and a facing sheet **10**. Approximately 50% of the cells may be filled with impermeable spheres **22** or other three dimensional closed surfaces such as cylinders with chamfered ends. The spheres are constructed of a material such as metal or plastic and can be solid or hollow.

The Sedlak reference describes a composite flexible sheet material comprising an elastomeric matrix having a number of internal cavities, with rigid filler particles contained within the cavities, but not adhered to the matrix. The cavities are intended to provide flexibility and softness to the elastomeric matrix material. As a consequence, the composite material is flexible, but the heavy particles are decoupled from the matrix so that the material as a whole does not behave as a flexible and heavy material.

The present invention as defined in Claim 1 as now amended provides a mechanical structure constituted at least in part by a honeycomb-type panel comprising two outside plates with an array of cells disposed between them, and wherein at least some of the cells are filled with a flexible polymer that contains a filler material, and the flexible filler-containing polymer has a specific gravity in the range of 3-10. As further defined in Claim 2, the polymer has a modulus in the range of  $10^4$  Pa to  $10^7$  Pa. This structure is different from the sheet material of

Sedlak, where the filler material is contained in voids or cavities. According to the present invention, the flexible polymer itself is filled with a filler material. The presence of the flexible filler-containing polymer in the cells produces a change in the vibratory behavior of the honeycomb panel and a change in the critical frequency of the panel.

The Sedlak composite material is in the form of a sheet. It must be mechanically deformed or stretched in order to produce the cavities and to decouple the filler particles from the elastomeric matrix. The thus-processed material can then be used in articles such as sheets, gloves, aprons and the like. The sheet may, for example, be combined with outer fabric layers as shown in Figure 5.

However, the material described in the Sedlak et al. reference would not be well suited for filling the cells of a honeycomb since it is in sheet form. The Wirt reference requires filling the cells of the honeycomb with three dimensional structures in the shape of spheres or cylinders. Nothing in the Wirt reference or the Sedlak reference would lead a person of ordinary skill in the art to use the Sedlak composite flexible sheet material in lieu of the spheres or cylinders taught by Wirt. In the absence of some clear teaching or motivation for modifying the Wirt structure by doing away with the spheres or cylinders, the proposed combination of Wirt and Sedlak fails to establish a *prima facie* case of obviousness. The Examiner contends that it would have been obvious to have used an elastic space filler with a high level of dense filler in the Wirt honeycomb in order to better absorb and block sound because of the teachings of Sedlak. However, the Sedlak reference is not concerned solely with deadening sound, but is concerned with incorporating filler materials for a variety of purposes, including radiation shielding or producing lightweight composite materials while maintaining flexibility. This is not a concern of Wirt. Furthermore, Sedlak can use various densities of filler material. There is no teaching or suggestion to use materials with the specific gravity claimed by Applicant.

For the reasons noted, it is submitted that the rejection is improper and should be withdrawn. Reconsideration by the Examiner and formal notification of the allowability of all claims as now presented are respectfully solicited.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper.

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However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

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